Complete Summary

GUIDELINE TITLE

Critical care delivery in the intensive care unit: defining clinical roles and the best practice model.

BIBLIOGRAPHIC SOURCE(S)

Brilli RJ, Spevetz A, Branson RD, Campbell GM, Cohen H, Dasta JF, Harvey MA, Kelley MA, Kelly KM, Rudis MI, St Andre AC, Stone JR, Teres D, Weled BJ. Critical care delivery in the intensive care unit: defining clinical roles and the best practice model. Crit Care Med 2001 Oct;29(10):2007-19. [58 references] PubMed

GUIDELINE STATUS

This is the current release of the guideline.

COMPLETE SUMMARY CONTENT

SCOPE

DISEASE/CONDITION(S)

Illness that requires critical care support

GUIDELINE CATEGORY

Management

CLINICAL SPECIALTY

Critical Care
Internal Medicine
Nursing
Pediatrics
Pharmacology

Pulmonary Medicine
Surgery

INTENDED USERS

Advanced Practice Nurses
Nurses
Pharmacists
Physician Assistants
Physicians
Respiratory Care Practitioners

GUIDELINE OBJECTIVE(S)

The objectives of this report include the following:

- To describe the types and settings of critical care practice
- To describe the clinical roles of members of the intensive care unit (ICU) healthcare team
- To examine available outcome data pertaining to the types of critical care practice
- To attempt to define a "best" practice model
- To propose additional research that should be undertaken to answer important questions regarding the practice of critical care medicine

TARGET POPULATION

Patients who require medical care in intensive care units

INTERVENTIONS AND PRACTICES CONSIDERED

Use of a multidisciplinary group practice model in the intensive care unit (ICU), including utilization of dedicated ICU personnel

MAJOR OUTCOMES CONSIDERED

- Mortality
- Hospital length of stay
- Intensive care unit (ICU) length of stay
- Bed utilization
- Days on mechanical ventilation
- Drug costs
- Complication rates

METHODOLOGY

METHODS USED TO COLLECT/SELECT EVIDENCE

Hand-searches of Published Literature (Primary Sources)
Hand-searches of Published Literature (Secondary Sources)
Searches of Electronic Databases

DESCRIPTION OF METHODS USED TO COLLECT/SELECT THE EVIDENCE

Medline-PubMed and the Cochrane Library were searched using the following key words: practice patterns; organizational characteristics; ICU; outcomes assessment; outcome; intensivist; pharmacist; critical care nurse; respiratory therapist. Articles were abstracted for further review if they described outcome assessment attributed to or associated with a model of clinical critical care practice. Examining the bibliography of articles previously abstracted identified additional references.

NUMBER OF SOURCE DOCUMENTS

143 articles were identified

METHODS USED TO ASSESS THE QUALITY AND STRENGTH OF THE EVIDENCE

Weighting According to a Rating Scheme (Scheme Given)

RATING SCHEME FOR THE STRENGTH OF THE EVIDENCE

Levels of Evidence

Level I = Large, randomized trials with clear-cut results; low risk of false-positive (alpha) error or false-negative (beta) error

Level II = Small, randomized trials with uncertain results; moderate to high risk of false-positive (alpha) and/or false-negative (beta) error

Level III = Nonrandomized, concurrent cohort comparisons, contemporaneous controls

Level IV = Nonrandomized, historical cohort comparisons/controls, and expert opinion

Level V = Case series, uncontrolled studies, and expert opinion

METHODS USED TO ANALYZE THE EVIDENCE

Review

DESCRIPTION OF THE METHODS USED TO ANALYZE THE EVIDENCE

Not stated

METHODS USED TO FORMULATE THE RECOMMENDATIONS

Expert Consensus

DESCRIPTION OF METHODS USED TO FORMULATE THE RECOMMENDATIONS

Not stated

RATING SCHEME FOR THE STRENGTH OF THE RECOMMENDATIONS

Grading of Recommendations

A = Supported by at least two level I investigations

B = Supported by only one level I investigation

C = Supported by level II investigations only

D = Supported by at least one level III investigation

E = Supported by level IV or level V evidence

COST ANALYSIS

A formal cost analysis was not performed and published cost analyses were not reviewed.

METHOD OF GUIDELINE VALIDATION

Peer Review

DESCRIPTION OF METHOD OF GUIDELINE VALIDATION

Not stated

RECOMMENDATIONS

MAJOR RECOMMENDATIONS

The grades of evidence (I-V) and levels of recommendations (A-E) are defined at the end of the Major Recommendations field.

The literature does not clearly support one model of critical care delivery over another; however, it does support a recommendation for a model wherein dedicated intensive care unit (ICU) personnel, specifically the intensivist, the ICU nurse, respiratory care practitioner, and pharmacist, all work as a team. Furthermore, this multidisciplinary group practice model should be led by a full-time critical care-trained physician who is available in a timely fashion to the ICU 24 hours per day (Grade D recommendation).

While leading the critical care service, the intensivist physician should have no competing clinical responsibilities (Grade E recommendation)

ICUs with an exclusive critical care service and operating in the closed format, as described previously, may have improved outcomes. When geographic constraints, resource limitations, and manpower issues allow, this organizational structure for the delivery of critical care services may be optimal (Grade E recommendation).

The presence of a pharmacist as an integral part of the ICU team, including but not limited to making daily ICU rounds, improves the quality of care in the ICU and reduces errors. The integration of a dedicated pharmacist into the ICU team is recommended (Grade C recommendation).

Physician practitioners in the ICU should have hospital credentials to practice critical care medicine. These credentials should incorporate both cognitive and procedural competencies (Expert opinion).

Definitions:

Levels of Evidence

Level I = Large, randomized trials with clear-cut results; low risk of false-positive (alpha) error or false-negative (beta) error

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Grading of Recommendations

A = Supported by at least two level I investigations

B = Supported by only one level I investigation

C = Supported by level II investigations only

D = Supported by at least one level III investigation

E = Supported by level IV or level V evidence

CLINICAL ALGORITHM(S)

None provided

EVIDENCE SUPPORTING THE RECOMMENDATIONS

TYPE OF EVIDENCE SUPPORTING THE RECOMMENDATIONS

The recommendations contained within this report are sometimes based on consensus expert opinion; however, where possible, recommendations were promulgated based on levels of evidence identified (see "Major recommendations").

BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS

POTENTIAL BENEFITS

- Reduced mortality
- Improved efficiency
- Decreased length of stay
- Decreased cost of care

POTENTIAL HARMS

Not stated

IMPLEMENTATION OF THE GUIDELINE

DESCRIPTION OF IMPLEMENTATION STRATEGY

An implementation strategy was not provided.

INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES

IOM CARE NEED

Getting Better

IOM DOMAIN

Effectiveness

IDENTIFYING INFORMATION AND AVAILABILITY

BIBLIOGRAPHIC SOURCE(S)

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care delivery in the intensive care unit: defining clinical roles and the best practice model. Crit Care Med 2001 Oct;29(10):2007-19. [58 references] PubMed

ADAPTATION

Not applicable: The guideline was not adapted from another source.

DATE RELEASED

2001 Oct

GUIDELINE DEVELOPER(S)

Society of Critical Care Medicine - Professional Association

SOURCE(S) OF FUNDING

Society of Critical Care Medicine (SCCM)

GUIDELINE COMMITTEE

Not stated

COMPOSITION OF GROUP THAT AUTHORED THE GUIDELINE

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FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST

Not stated

GUIDELINE STATUS

This is the current release of the guideline.

GUIDELINE AVAILABILITY

Electronic copies: Available in Portable Document Format (PDF) from the Society of Critical Care Medicine (SCCM) Web site.

Print copies: Available from the Society of Critical Care Medicine, 701 Lee Street, Suite 200, Des Plaines, IL 60016; Phone: (847) 827-6869; Fax: (847) 827-6886; on-line through the SCCM Bookstore.

AVAILABILITY OF COMPANION DOCUMENTS

None available

PATIENT RESOURCES

None available

NGC STATUS

This NGC summary was completed by ECRI on August 18, 2004.

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